

U.S. ENVIRONMENTAL PROTECTION AGENCY  
POLLUTION/SITUATION REPORT  
Canadian Radium and Uranium - Removal Polrep  
Initial Removal Polrep



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Region II

**Subject:** POLREP #1  
Initial  
Canadian Radium and Uranium  
A23P  
Mount Kisco, NY  
Latitude: 41.2116972 Longitude: -73.7276305

**To:**  
**From:** Daniel Gaughan, On-Scene Coordinator  
**Date:** 9/25/2015  
**Reporting Period:** August 2015

## 1. Introduction

### 1.1 Background

<b>Site Number:</b>	A23P	<b>Contract Number:</b>	
<b>D.O. Number:</b>		<b>Action Memo Date:</b>	
<b>Response Authority:</b>	CERCLA	<b>Response Type:</b>	Emergency
<b>Response Lead:</b>	EPA	<b>Incident Category:</b>	Removal Action
<b>NPL Status:</b>	Non NPL	<b>Operable Unit:</b>	
<b>Mobilization Date:</b>	8/3/2015	<b>Start Date:</b>	8/3/2015
<b>Demob Date:</b>	8/18/2015	<b>Completion Date:</b>	8/18/2015
<b>CERCLIS ID:</b>	NYD987001468	<b>RCRIS ID:</b>	
<b>ERNS No.:</b>		<b>State Notification:</b>	yes
<b>FPN#:</b>		<b>Reimbursable Account #:</b>	

#### 1.1.1 Incident Category

Emergency Removal Action

#### 1.1.2 Site Description

The Canadian Radium & Uranium Corp., hereinafter referred to as "the CRU site" or "the site" (EPA ID No. NYD987001468) consists of a small area of radionuclide contamination located at geographic coordinates 41.21194, -73.72694 in The Village of Mount Kisco, NY. The area of observed contamination based on gamma screening is approximately 2,260.445 square feet (ft<sup>2</sup>) and is located on 105 Kisco Avenue. Based on previous investigations and soil sampling at the site, the residual contamination from former operations is believed to be located throughout the 105 Kisco Avenue property, but many areas

do not exhibit elevated gamma radiation due to shielding by cover materials. The CRU site is bordered to the north by commercial properties; to the west by Kisco Avenue; to the south by Rail Road Avenue; and to the east by railroad tracks.

The historic CRU property (103 and 105 Kisco Ave.) is 2.72 acres and is currently occupied by a landscaping business (103 Kisco Ave.) and a stone, masonry, and landscaping business (105 Kisco Ave.). From 1943 until approximately 1966, the CRU facility operations included the recovery of uranium and other radioactive elements from uranium-bearing sludge, old instrumentation, and watch dials. This work began as part of the federal government's Manhattan Engineering District (Manhattan Project).

#### **1.1.2.1 Location**

103-105 Kisco Avenue, Mount Kisco, NY

#### **1.1.2.2 Description of Threat**

Radioactive Contamination, Indoor Air-Radon

#### **1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results**

The historic CRU property (103 and 105 Kisco Ave.) is 2.72 acres and is currently occupied by a landscaping business (103 Kisco Ave.) and a stone, masonry, and landscaping business (105 Kisco Ave.). From 1943 until approximately 1966, the CRU facility operations included the recovery of uranium and other radioactive elements from uranium-bearing sludge, old instrumentation, and watch dials. This work began as part of the federal government's Manhattan Engineering District (Manhattan Project).

From 1943 to the 1950s, the primary product was uranium; subsequently, radium became the principal product until the facility's closure.

In November and December 1966, the facility buildings (a two-story concrete block building and two smaller one-story concrete block buildings) were decontaminated and demolished. Removal of radioactive dirt to a depth of 12 inches was required on the CRU premises. After demolition and decontamination, a post-operation survey was conducted by Isotopes, Inc. Railroad Avenue was constructed where the main CRU building once stood and was put in place by the urban renewal efforts in the area. Between 1964 (pre-demolition/decontamination) and 1971 (post-demolition/decontamination), the building layout of the site completely changed and it is believed that none of the original CRU facility buildings remained after the year 1971.

On April 20, 1979, a survey was performed by the Assistant Commissioner of Health for Environmental Quality, Westchester Department of Health. The 1979 investigation reported that the high readings were obtained from an area covering approximately one square yard of the property in an area not used by the public; after the review of data, the report indicated that the dose rates found did not pose a public health hazard to the public passing the fenced area, to persons working in buildings adjacent to the area, or to persons living across the railroad tracks to the east.

In a memorandum dated Feb 7, 1980, the Westchester County Health Department described investigation findings in more detail. The area in question was approximately 78 feet by 60 feet, enclosed by a chain-link fence located between the railroad tracks and a concrete paved area. The most significant contaminated area was a strip 15 feet by 5 feet, containing two separate "hot spots". Elevated readings several times above background were reported for an area extending about 50 feet south from the chain-link fence. The memorandum stated that the origin of this contamination was unknown and that it was not discovered in previous surveys.

In September 1993, the Bureau of Environmental Radiation Protection of the New York State Department of Health (NYSDOH) completed a survey of the CRU site; indoor radon measurements were collected (i.e., office, show room, storage/sale floor) which documented a maximum value of 9.8 pCi/L, and the average of the different detectors was about 8.1 pCi/L. NYSDOH also identified two outdoor areas where presence of radioactive materials were indicated: 1) the back of Richard's Lumber, and 2) the road that

runs next to the railroad tracks and adjacent to a fence post inside the fenced portion of what appeared to be Richard's Lumber property on the south side of Railroad Avenue.

In 1994, EPA conducted an on-site inspection to measure radon levels, collect air and soil samples, and measure exposure rates. The purpose of the investigation was to determine if conditions required immediate action and if the site was eligible for long-term remediation under the federal Superfund Program. Elevated exposure rate measurements were observed on both the northern and southern portions of the site property. Radium-226 (Ra-226) concentrations in soil samples taken from the top 1.5 feet ranged from 3 to 150 picocuries per gram (pCi/g). All of the radon measurements were below EPA's guideline (i.e., 4 picocuries per liter [pCi/L]) and the air samples collected at the site did not detect any suspension of radioactive contamination. EPA concluded that the site was not a potential candidate for inclusion in the National Priorities List and, therefore, was not eligible for long-term remediation.

In July 1998, a complete radiological survey for Village of Mt. Kisco and Richard's Lumber (former CRU) was conducted by NYSDEC. The property owned by the Village of Mount Kisco (103 Kisco Avenue) was found to have contamination over one large unpaved area (about 4,000 to 5,000 ft<sup>2</sup>) and a few smaller areas. The 1998 report states that, on the Mt. Kisco property, the highest concentrations of radium observed were a few hundred pCi/g and that most of the contamination was in the top one foot of soil. There is no documentation of shielding or other control measures implemented on 103 Kisco Avenue property, though current conditions suggest the property was recently paved with asphalt (of an unknown depth) or other cover materials.

The 1998 report further states that the survey of the Richard's Lumber (105 Kisco Avenue) property indicated that radioactive materials were present under the parking lot, but no samples were taken beneath the asphalt. The highest concentration of radium at the site was found just north of Railroad Avenue (about 6,000 pCi/g). A large part of the main outside storage area was reported to be contaminated with radium near the surface as well as within some soil profiles to depths of about 4 feet. The July 1998 report indicated that radiation doses to workers or visitors to the site as it was used at the time were not significant. The July 1998 report suggested that significant radium contamination was present on both Mt. Kisco and Richard's Lumber properties. NYSDEC did not consider the site to be fully characterized at the completion of the survey.

Current site conditions for the 105 Kisco Avenue property, New York Stone and Masonry Supply, are normal for stone, masonry, and landscaping business and have not changed significantly since the 1998 report. Although the supporting documentation does not describe all redevelopment activities at the site, it is not believed that any of the current buildings were part of the original CRU facility. Many areas were unable to be screened due to obstructions (e.g., wood piles, heavy machinery, roll-offs). The current property owner did not allow WESTON to perform gamma level screenings inside the main building; however, the owner did allow WESTON to take outdoor gamma screening levels in outdoor sheds and other storage warehouse-type buildings.

Current site conditions for the 103 Kisco Avenue property, Hickory Homes and Properties, Inc., are normal for a landscaping supply and material storage facility. The property is semi-paved (during the 1998 report, the property was not paved), and completely fenced with an access gate. Many areas were unable to be screened due to obstructions (e.g., wood piles, heavy machinery, roll-offs). There were no elevated screening readings on the 103 Kisco Avenue property.

In order to establish the area of observed contamination, Weston Solutions, Inc. (WESTON®) performed a complete gamma screening of the site on November 20-22, 2013. Significant readings (i.e., 2x the site-specific background) of gamma screening results were used to establish an area of observed contamination of approximately a total of 2260.445 ft<sup>2</sup>.

On November 20-21, 2013, WESTON personnel collected soil samples as part of the Site Reassessment sampling event for the CRU site. A total of nine soil samples (including 1 environmental duplicate sample) were collected from eight boreholes advanced through the CRU site and the right-of-way (ROW) of the property adjacent to the north of the Site property. Soil samples were also collected from two

locations suspected to be outside the influence of the area of observed contamination to document background conditions. The soil samples collected represent the highest levels of gamma radiation recorded for each borehole.

The soil samples collected by WESTON were submitted for analysis of Target Analyte List (TAL) metals, including mercury; isotopic thorium (IsoTh), isotopic uranium (IsoU), Radium-226, and Radium-228 by alpha spectroscopy; and radioisotopes by gamma spectroscopy. Analytical results indicate concentrations of radionuclides found in the soil to be significantly higher than at background conditions.

Air measurements were collected on November 25, 2013. Two potential source measurements (and one duplicate) and one downwind measurement were collected on the site property. Two air monitoring locations were positioned north of site property and are considered to be background sample locations upwind of the influence of site activities, based on the historic wind directions. Air monitoring results indicated no elevated concentrations of site-attributable radionuclides to be significantly higher than at background conditions.

Sediment samples were collected on May 15, 2014 along the surface water pathway. Potential release samples were collected near the PPE, downstream of the PPE within the perennial drainage ditch, and from Kisco River Tributary 8 at the confluence with the perennial drainage ditch. One background location was collected upstream from the PPE and another background location was collected from the tributary upstream of the confluence with the perennial drainage ditch. Analytical data suggest that there is a release of site-attributable hazardous substances from the CRU site.

The USEPA Pre-Remedial Program performed an assessment at the Canadian Radium & Uranium Site (CRU) in 2013-2014. Based on the Pre-Remedial Evaluation, a recommendation of **NO FURTHER REMEDIAL ACTION PLANNED (NFRAP)** was given for the Canadian Radium & Uranium Site.

## 2. Current Activities

### 2.1 Operations Section

#### 2.1.1 Narrative

USEPA Pre-Remedial Program performed an assessment at the Canadian Radium & Uranium Site (CRU) in 2013-2014. Based on the Pre-Remedial Evaluation, a recommendation of **NO FURTHER REMEDIAL ACTION PLANNED (NFRAP)** was given for the Canadian Radium & Uranium Site. However, it was determined that further assessment should be performed and the site was referred to the USEPA Removal Program.

On June 16, 2015, OSC Gaughan was assigned as the lead on-scene coordinator the Canadian Radium & Uranium Site.

On August 3, 2015-August 7, 2015, OSC Gaughan, OSC Daly and Weston mobilized at the Canadian Radium & Uranium Site to continue assessment activities. The Site has three operators: a stone & masonry business (not in operation currently but planning to lease to tenants in the near future); a landscaping/general contractor business (operational) and an adjacent Metropolitan Transit Authority & Metro-North Commuter Railroad Company property.

The tasks performed include:

- Grid out all survey areas within all buildings on-site
- Gamma delineation with two separate instruments (Ludlum 2241/Fluke PIC) inside the buildings and specific identified outdoor locations
- RAD 7 Radon/Thoron survey within the buildings (Excluding the MTA building) and specific identified outdoor locations

- SAM 940 spectrums were collected in areas that exhibited elevated gamma readings.
- Reuter Stokes HPIC readings were collected at specific locations inside the buildings (Excluding the MTA building) as well as in outdoor locations
- Deployment of radon carbon cartridges within all buildings at the Site
- Collection of soil boring samples from several locations throughout the 103 and 105 Kisco Ave. properties (excluding the MTA property).
- OSC coordination tasks with
  - Owner/operator of Site
    - There are two operators at this site and three property owners
  - Public Affairs
  - Legal Staff

Preliminary draft results indicate that there are no elevated gamma within the occupied spaces of the buildings at the site. However, there were elevated radon survey readings with the RAD7 within the main building of the stone and masonry property. This would support previous findings that the property owner verbally reported to EPA that they obtained radon cartridge sample results above EPA action limit of 4.0 pCi/L

On August 18, 2015, OSC Daly and Weston personnel returned to the site to collect soil boring samples from the MTA property utilizing the MTA contractor. The MTA performed a utility mark out prior to collection of the soil samples.

#### **2.1.2 Response Actions to Date**

An Action Memo (or equivalent) was not required for this voluntary PRP emergency removal since this response did not lead to action requiring Superfund activity under CERCLA 104 (a) or an action whereby a PRP performs work under an Agency enforcement instrument.

As a result of the radon cartridge sampling, the PRP installed a sub-slab radon mitigation system in the 105 Kisco Ave. main building. The installation of the sub-slab radon mitigation system complies with the participating Cooperating Agencies. EPA and Weston plan to return to the site to collect post-mitigation system installation samples.

#### **2.1.3 Enforcement Activities, Identity of Potentially Responsible Parties (PRPs)**

The main PRP is the group of 105 Mt. Kisco Associates LLC, Amanda's Lane LLC and Mark Stagg. This main group is installing the radon mitigation system. Other PRPs are being investigated by the USEPA Enforcement Team.

#### **2.1.4 Progress Metrics**

<b><i>Waste Stream</i></b>	<b><i>Medium</i></b>	<b><i>Quantity</i></b>	<b><i>Manifest #</i></b>	<b><i>Treatment</i></b>	<b><i>Disposal</i></b>
radon	gas	unknown		sub-slab venting system	

## **2.2 Planning Section**

### **2.2.1 Anticipated Activities**

All data is being compiled by OSCs and Weston for presentation to technical team. EPA and Weston

plan to return to the site to collect post-mitigation system installation samples.

#### **2.2.1.1 Planned Response Activities**

None currently pending full review of available data.

#### **2.2.1.2 Next Steps**

#### **2.2.2 Issues**

### **2.3 Logistics Section**

No information available at this time.

### **2.4 Finance Section**

No information available at this time.

### **2.5 Other Command Staff**

No information available at this time.

## **3. Participating Entities**

### **3.1 Unified Command**

### **3.2 Cooperating Agencies**

NYS DEC

NYS DOH

West Chester County DOH

## **4. Personnel On Site**

OSC Gaughan

OSC Daly

Weston- 4 technicians

## **5. Definition of Terms**

No information available at this time.

## **6. Additional sources of information**

No information available at this time.

## **7. Situational Reference Materials**

No information available at this time.